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Eyes wide open: Reliable gender assignment in Felidae, contrasted with Nimravidae

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Lions are unique among modern Felidae, both as social animals and in their manifestation of a bone texture phenomenon limited to adult males. Previous conjecture that size differences allowed distinguishing between male and female lion skulls was tested and falsified. Multiple small holes, referred to as porosity, were present in 100% of adult male lions; absent, in 100% of adult female lions. The same gender specificity was noted in the extinct cave lion *Panthera spelaea*. Maxillary porosity was also found in *Smilodon* and *Megantereon*, but not Nimravidae.

Maxillary porosity is recognizable in Felidae since the Pleistocene, but has not been recognized in Nimravidae. While clearly a male phenomenon in *Panthera leo*, assessment of specificity in *Smilodon* and *Megantereon* awaits availability of associated skeletal material which would allow independent assessment of gender.

Biography

Bruce M. Rothschild graduated from New Jersey College of Medicine in 1973. He is a Fellow of the American College of Physicians, American College of Rheumatology and Society of Skeletal Radiology and elected to the International Skeletal Society. He has been recognized for his work in Rheumatology and Skeletal Pathology where his special interests focus on clinical-anatomic-radiologic correlation, data-based paleopathology, evolution of inflammatory arthritis and tuberculosis and management of inflammatory arthritis. He is widely recognized for his contributions to understanding radiologic manifestations of rheumatologic disease.He has been a Visiting Professor at universities in the US, Canada, the Carribean, South America, Europe, the Middle East, South Africa, Asia and Australia and has been an invited lecturer at universities, hospital and museums throughout the world.

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